

Minimum Cost Nanosatellite Launch System, Phase I

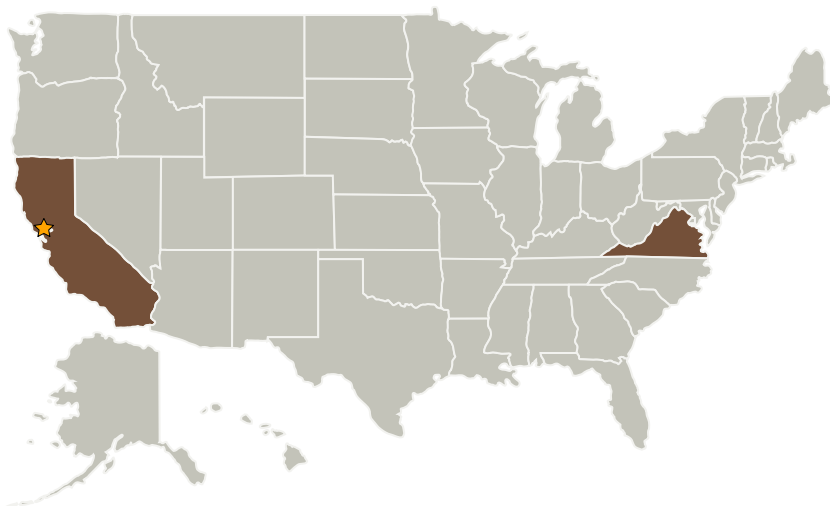
Completed Technology Project (2008 - 2008)



Project Introduction

Delta Velocity Corporation proposes the development of a very low cost, highly responsive nanosat launch system. We propose to develop an integrated propulsion system and launch vehicle configuration that provides responsiveness approaching that of solid propellant systems using a non-toxic storable liquid bipropellant mix, an innovative single pressure vessel stage design, and an integrated engine/tankage system. The system combines these innovative propulsion technologies with proven sounding rocket operations concepts to minimize cost. Our two stage nanosat launch system uses rail launch and static stability in early flight phases and a deliberate non-optimum stage sizing to eliminate the requirement for an expensive flight termination system and associated ground infrastructure. Our focus on inherent system safety and maximum vehicle simplicity benefits the responsiveness, reliability, and cost of space launch. The propellants chosen are inexpensive, easy to handle, and inherently safe. These room temperature storable propellants allow use of common, low cost vehicle materials and construction techniques. The system is scalable, allowing it to be adapted to a wide range of space launch systems. The design simplicity of the configuration promises to reduce costs and improve responsiveness of space launch systems.

Primary U.S. Work Locations and Key Partners



Minimum Cost Nanosatellite Launch System, Phase I

Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Organizational Responsibility	1
Project Transitions	2
Project Management	2
Technology Areas	2

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Ames Research Center (ARC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Minimum Cost Nanosatellite Launch System, Phase I

Completed Technology Project (2008 - 2008)



Organizations Performing Work	Role	Type	Location
★ Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California
Delta Velocity Corporation	Supporting Organization	Industry	Leesburg, Virginia

Primary U.S. Work Locations

California	Virginia
------------	----------

Project Transitions

**January 2008:** Project Start**July 2008:** Closed out

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Joseph Padavano

Technology Areas

Primary:

- TX14 Thermal Management Systems
 - └ TX14.1 Cryogenic Systems
 - └ TX14.1.2 Launch Vehicle Propellant